

## 1350.0 - Australian Economic Indicators, 1995

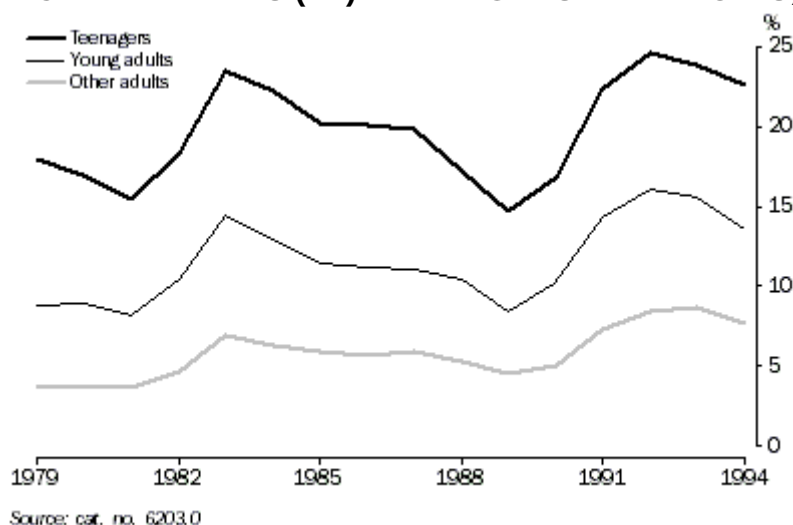
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### 1995 Feature Article - Measuring Teenage Unemployment

#### Introduction

The labour force characteristics of teenagers, particularly their unemployment rate, have attracted considerable interest over many years. Official estimates of teenage unemployment (derived from the ABS Monthly Labour Force Survey) have shown that the unemployment rate for persons aged 15 to 19 years has been consistently higher than for those aged 20 years and over, as shown in Graph 1. In 1994, the average unemployment rate for teenagers was 22.6 per cent, compared to 13.6 per cent for young adults (aged 20 to 24 years) and 7.7 per cent for other adults (aged 25 years and over).

**GRAPH 1. UNEMPLOYMENT RATES (R1): TEENAGERS AND ADULTS, Annual averages**



The official unemployment rate (R1) for a particular population group is calculated by dividing the total number of unemployed within the group by the total number in the labour force (i.e. the employed plus the unemployed) for the same group. This measure is based on International Labour Office (ILO) recommendations.

$$R1 = (\text{unemployed} / (\text{employed} + \text{unemployed})) \times 100\%$$

During recent years, there have been instances of misinterpretation of the official unemployment rate for teenagers. In particular, there has been a tendency for some commentators to infer, mistakenly, that the teenage unemployment rate of (say) 20 per cent means that 20 per cent of all teenagers are unemployed. It has also been suggested that the teenage unemployment rate is misleading because it takes no account of whether teenagers who are classified as unemployed attend educational institutions.

This article examines the composition of the unemployment rate, and investigates the contribution to the teenage unemployment rate of different segments of the teenage labour force. It also discusses a number of supplementary measures of teenage unemployment which can be calculated using data regularly released by the ABS. State estimates of these teenage unemployment measures are also provided.

### Composition of the teenage unemployment rate

A major factor distinguishing the labour force behaviour of teenagers from that of other population groups is their level of attendance at educational institutions. In 1994, 44.8 per cent of teenagers in the labour force were attending an educational institution full time, compared with only 9.1 per cent of young adults. In addition, 93.5 per cent of teenagers who combined participation in the labour force with full-time attendance at an educational institution were engaged in the part-time labour force (i.e. were either employed part time or looking for part-time work).

The teenage unemployment rate (R1) can be viewed as a weighted combination of individual unemployment rates for four sub-groups of the teenage labour force. These four sub-groups are defined on the basis of their participation in the full-time or part-time labour force and their attendance or non-attendance at an educational institution full time. They are:

- students in the full-time labour force;
- non-students in the full-time labour force;
- students in the part-time labour force; and
- non-students in the part-time labour force.

"Students" are defined here as those attending an educational institution full-time, and a student is defined as being in the labour force if they either have a job or are actively looking for work and are available to start work. The contribution of each sub-group's unemployment rate to the overall teenage unemployment rate depends on the sub-group's share of the teenage labour force. A similar representation of the young adult unemployment rate is also possible, as shown in Table 1.

**TABLE 1. CONTRIBUTION TO UNEMPLOYMENT RATES: TEENAGERS AND YOUNG ADULTS, SUB-GROUPS ANNUAL AVERAGE 1994**  
Per cent

Sub-group (a)	Unemployment rate	Labour force share	Contribution to unemployment rate
<b>TEENAGERS</b>			
Students in full-time labour force	59.6	2.9	1.6
Non-students in full-time labour force	28.6	43.6	12.5
Students in part-time labour force	18.2	41.9	7.6
Non-students in part-time labour force	7.7	11.6	0.9
<b>Total</b>	<b>22.6</b>	<b>100.0</b>	<b>22.6</b>

YOUNG ADULTS			
Students in full-time labour force	37.8	1.5	0.5
Non-students in full-time labour force	14.4	78.1	11.3
Students in part-time labour force	11.7	7.6	0.9
Non-students in part-time labour force	6.8	12.9	0.9
<b>Total</b>	<b>13.6</b>	<b>100.0</b>	<b>13.6</b>

(a) 'Students' are persons attending an educational institution full time.  
Source: Labour Force, Australia (cat. no. 6203.0)

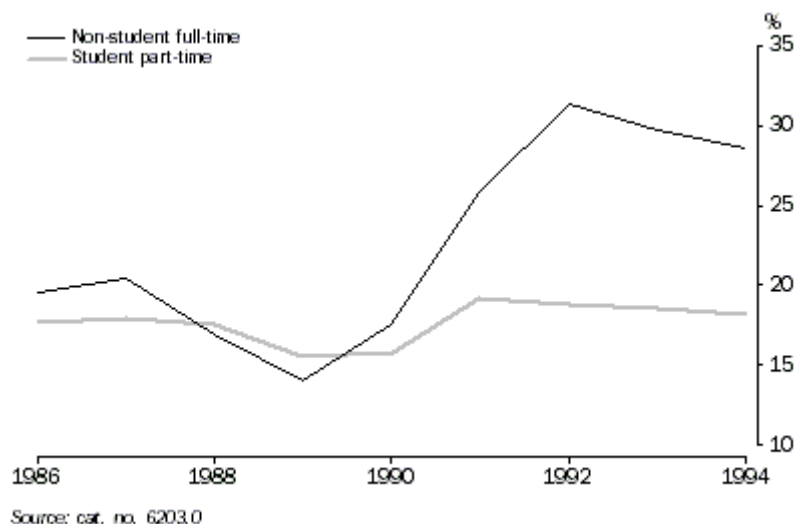
In 1994, teenage students in the full-time labour force made very little contribution to the teenage unemployment rate. This sub-group had by far the highest unemployment rate (59.6 per cent), but because it had a very small share (2.9 per cent) of the teenage labour force, its overall contribution to the unemployment rate (1.6 per cent = 59.6 per cent x 2.9 per cent) was very small. The very high unemployment rate for this sub-group probably reflects the immediate exit from full-time education of successful job searchers within this sub-group.

The largest single contribution to the unemployment rate was from teenage non-students in the full-time labour force. This sub-group had the second highest unemployment rate and the largest share of the teenage labour force. In 1994, the unemployment rate for this sub-group was much higher for teenagers (28.6 per cent) than for young adults (14.4 per cent). This difference is the major contributing factor to the large difference between the unemployment rates of teenagers and young adults.

The other major contribution to the unemployment rate was from teenage students in the part-time labour force. While this sub-group had a similar share of the teenage labour force to the previous sub-group, its unemployment rate was significantly lower, and hence its contribution to the teenage unemployment rate was smaller.

Between 1986 and 1994, the unemployment rate for teenage non-students in the full-time labour force has been affected by business cycle fluctuations far more than the unemployment rate for teenage students in the part-time labour force. While the unemployment rates for both sub-groups fell slightly during the employment growth period of the late 1980s, the unemployment rate for teenage non-students in the full-time labour force rose significantly more during the period of the 1990-91 recession, as shown in Graph 2.

#### GRAPH 2. NON-STUDENT FULL-TIME AND STUDENT PART-TIME UNEMPLOYMENT RATES: TEENAGERS, Annual averages



Furthermore, over this same period, there was a substantial shift in the structure of the teenage labour force away from non-students in the full-time labour force (from 64.7 to 43.6 per cent) to students in the part-time labour force (from 25.5 to 41.9 per cent).

These two factors have exerted offsetting influences on the teenage unemployment rate. An indication of the impact of this shift in the structure of the teenage labour force can be obtained by calculating a standardised unemployment rate. The standardised unemployment rate for 1994 is calculated by applying the structure of the teenage labour force in 1986 to the individual unemployment rates for the four sub-groups in 1994. On this basis, if the teenage labour force had the same distribution across the four subgroups in 1994 as in 1986, the teenage unemployment rate would have been 25.4 per cent, 2.8 percentage points higher than the actual teenage unemployment rate in 1994.

### Full-time and non-student unemployment rates

Unemployment rates for selected subsets of the teenage labour force provide supplementary measures to the official unemployment rate. Two such unemployment rates, which focus on selected subsets of the teenage labour force, are the "full-time" unemployment rate and the "non-student" unemployment rate. Both of these unemployment rates exclude those teenage full-time students in the part-time labour force, and hence focus on those teenagers whose participation in the labour force is their primary activity. The full-time unemployment rate (R2) includes only those who participated in the full-time labour force.

$R2 = (\text{unemployed looking for full-time work} / (\text{employed full-time} + \text{unemployed looking for full-time work})) \times 100\%$

The non-student unemployment rate (R3) excludes those who attend an educational institution full-time, but includes both non-students in the full-time labour force and non-students in the part-time labour force.

$R3 = (\text{unemployed and not attending education full time} / (\text{employed full time} + \text{unemployed looking for education full time})) \times 100\%$

In 1994, both the full-time teenage unemployment rate (R2), (30.2 per cent) and the non-student teenage unemployment rate (R3), (24.3 per cent) were higher than the teenage unemployment rate (R1), (22.6 per cent), as shown in Table 2. While the teenage unemployment rate includes a significant contribution from students in the part-time labour force, this sub-group is not included

in either the full-time or non-student unemployment rates. Indeed, the major contribution to both full-time and non-student unemployment rates is from non-students in the full-time labour force. The unemployment rate for this sub-group (28.6 per cent) is much higher than for students in the part-time labour force (18.2 per cent).

**TABLE 2. FULL-TIME AND NON-STUDENT UNEMPLOYMENT RATES: TEENAGERS AND ADULTS, ANNUAL AVERAGE 1994**  
Per cent

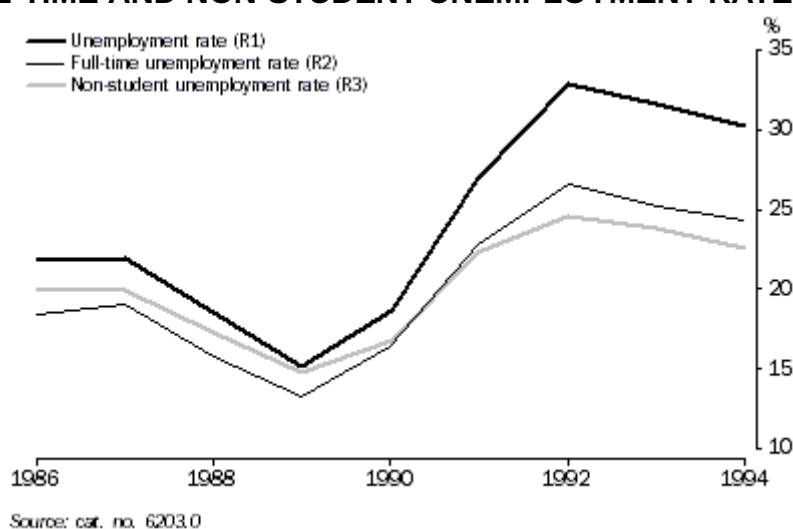
	Unemployment rate	Full-time unemployment rate	Non-student unemployment rate
	R1	R2	R3
Teenagers	22.6	30.2	24.3
Young adults	13.6	14.8	13.3
Other adults	7.7	8.4	7.7(a)
<b>Total</b>	<b>9.8</b>	<b>10.4</b>	<b>9.3(a)</b>

These unemployment rates are based on estimates of attendance at educational institutions for those aged 25 and over from Transition from Education to Work (cat. no. 6227.0)

Source: Labour Force, Australia (cat. no. 6203.0)

The difference between the full-time and non-student unemployment rates, namely R2 and R3 respectively, reflects the inclusion in the full-time unemployment rate of students in the full-time labour force and the inclusion in the non-student unemployment rate of non-students in the part-time labour force. The full-time unemployment rate was higher than the non-student unemployment rate, as shown in Graph 3, because the unemployment rate for non-students in the part-time labour force (7.7 per cent) was much lower than that for students in the full-time labour force (59.6 per cent).

**GRAPH 3. FULL-TIME AND NON-STUDENT UNEMPLOYMENT RATES: TEENAGERS**



A similar pattern was evident for the young adult labour force, although the magnitude of the differences between the full-time and non-student unemployment rates and the official unemployment rate was much less (see Table 3). This was primarily because all three

unemployment rates for young adults were dominated by the unemployment rate for non-students in the full-time labour force. This sub-group comprised 78.1 per cent of the young adult labour force for the unemployment rate, 98.2 per cent for the full-time unemployment rate and 85.9 per cent for the non-student unemployment rate.

**TABLE 3. CONTRIBUTION TO FULL-TIME AND NON-STUDENT UNEMPLOYMENT RATES: TEENAGERS AND YOUNG ADULTS, SUB-GROUPS, ANNUAL AVERAGE 1994**

Sub-group	Unemployment rate (%)	Labour force share (%)		Contribution to unemployment rate (%)	
		R2	R3	R2	R3
TEENAGERS					
Students in full-time labour force	59.6	6.2	0.0	3.4	0.0
Non-students in full-time labour force	28.6	93.8	79.1	26.8	22.6
Students in part-time labour force	18.2	0.0	0.0	0.0	0.0
Non-students in part-time labour force	7.7	0.0	20.9	0.0	1.7
Total	22.6	100.0	100.0	30.2	24.3
YOUNG ADULTS					
Students in full-time labour force	37.8	1.8	0.0	0.7	0.0
Non-students in full-time labour force	14.4	98.2	85.9	14.1	12.4
Students in part-time labour force	11.7	0.0	0.0	0.0	0.0
Non-students in part-time labour force	6.8	0.0	14.1	0.0	1.0
Total	13.6	100.0	100.0	14.8	13.3

Source: Labour Force, Australia (cat. no. 6203.0)

Like the official teenage unemployment rate, both the full-time and non-student teenage unemployment rates declined during the employment growth period of the late 1980s and then rose during the period of the 1990-91 recession. However, during the 1990-91 recession both the full-time and non-student unemployment rates for teenagers increased at a much greater rate than the official unemployment rate. The lower rate of increase in the official unemployment rate reflects the moderating influence of the unemployment rate for students in the part-time labour force which remained relatively steady during the 1990-91 recession, as shown in Graph 2.

### Additional unemployment ratios

Another factor distinguishing the labour force behaviour of teenagers from that of other population groups is their level of participation in the labour force. In 1994, the labour force participation rate for teenagers was 57.5 per cent, compared with 82.4 per cent for young adults.

A significant proportion of the teenage population are not in the labour force because they are still attending an educational institution full-time. This is reflected in the much higher participation rate for teenagers not attending an educational institution full-time (88.1 per cent) compared to teenagers attending an educational institution full-time (40.4 per cent).

An additional unemployment measure which takes education participation into account is the unemployment to "fully-active" ratio (R4). This ratio considers as "unemployed" only those unemployed who did not attend an educational institution full-time and considers as "employed" those who were employed in the conventional sense plus all others who attended an educational institution full-time.

$$R4 = (\text{unemployed and not attending education full-time} / (\text{in the labour force} + \text{others attending education full-time})) \times 100\%$$

Another approach is to consider the proportion of the civilian population which is unemployed as distinct from the proportion of the labour force which is unemployed. The unemployment to population ratio (R5) for a particular population group is calculated by dividing the total number of unemployed within the group by the total number in the civilian population for the same group.

$$R5 = (\text{unemployed} / \text{civilian population}) \times 100\%$$

A simple alternative to this ratio is the "full-time" unemployment to population ratio (R6). This ratio considers the proportion of the teenage civilian population unemployed and looking for full-time work, and hence excludes those unemployed who are looking for part-time work from the numerator.

$$R6 = (\text{unemployed looking for full-time work} / \text{civilian population}) \times 100\%$$

Unemployment to population ratios are lower than unemployment rates because they compare the unemployed with the civilian population, rather than just the labour force (which is a subset of the civilian population).

In 1994, the teenage unemployment to fully-active ratio (R4), (8.1 per cent) and the full-time teenage unemployment to population ratio (R6), (8.1 per cent) were both lower than the teenage unemployment to population ratio (R5), (13.0 per cent).

As shown in Table 4, the difference between the unemployment rates and unemployment ratios was much greater for teenagers than for young adults. This was primarily due to the much lower labour force participation rate for teenagers. While the teenage unemployment to fully-active ratio was much lower than the teenage unemployment rate, this was not the case for young adults, mainly because there was a much lower proportion of the young adult population who attended an educational institution full-time.

**TABLE 4. FULL-TIME AND FULLY-ACTIVE UNEMPLOYMENT RATIOS: TEENAGERS AND ADULTS, ANNUAL AVERAGE 1994**

	Unemployment rate (%)	Unemployment to fully-active ratio (%)	Unemployment to population ratio (%)	Full-time unemployment to population ratio (%)
	R1	R4	R5	R6
Teenagers	22.6	8.1	13.0	8.1
Young adults	13.6	11.2	11.2	9.7
Other adults	7.7	7.0(a)	4.7	4.1

<b>Total</b>	<b>9.8</b>	<b>7.7(a)</b>	<b>6.1</b>	<b>5.0</b>
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These unemployment ratios are based on estimates of attendance at educational institutions for those aged 25 and over from Transition from Education to Work (cat. no. 6227.0)  
Source: Labour Force, Australia (cat. no. 6203.0)

## State estimates of teenage unemployment

There is significant variation in unemployment rates between the States and Territories. This is primarily due to differences in the unemployment rates for sub-groups across the States, together with differences in the composition of the teenage labour force within States. Some insight into these differences can be gained from State variations in the various teenage unemployment measures.

In 1994, there was a close relationship between the official unemployment rate and the supplementary unemployment rates. Those States with relatively high teenage unemployment rates generally had high supplementary unemployment rates, and those States with relatively low teenage unemployment rates generally had low supplementary unemployment rates. However, differences between the States in the composition of the teenage labour force were evident from the relative levels of the various teenage unemployment measures, as shown in Table 5.

**TABLE 5. UNEMPLOYMENT RATES AND UNEMPLOYMENT RATIOS: TEENAGERS, STATES AND TERRITORIES, ANNUAL AVERAGE 1994**

	Unemployment rate (%)	Full-time unemployment rate (%)	Non-student unemployment rate (%)	Unemployment to fully-active ratio (%)	Unemployment to population ratio (%)	Full-time unemployment to population ratio (%)
	R1	R2	R3	R4	R5	R6
New South Wales	21.7	30.1	24.3	8.0	12.3	7.9
Victoria	25.2	35.7	29.9	8.1	13.5	8.0
Queensland	21.2	26.0	20.9	8.0	13.2	7.8
South Australia	28.0	37.1	28.2	10.5	15.6	10.5
Western Australia	18.4	22.4	17.9	7.1	11.8	7.4
Tasmania	24.2	32.6	24.4	9.8	14.2	10.4
Northern Territory	21.1	28.8	21.7	8.1	9.3	6.7
Australian Capital Territory	23.2	32.7	23.7	6.1	13.6	6.7
<b>Australia</b>	<b>22.6</b>	<b>30.2</b>	<b>24.3</b>	<b>8.1</b>	<b>13.0</b>	<b>8.1</b>

(a) Labour Force, Australia (cat. no. 6203.0)

For instance, while the teenage unemployment rate for Victoria (25.2 per cent) was much lower than that for South Australia (28.0 per cent), the non-student unemployment rate for Victoria (29.9 per cent) was higher than that for South Australia (28.2 per cent). This difference was primarily due to a much higher unemployment rate among teenage students in the part-time labour force in South Australia, although this effect was partially offset by a lower proportion of



the teenage labour force in this sub-group in South Australia.

Similarly, while the teenage unemployment rate for Western Australia (18.4 per cent) was lower than that for the Australian Capital Territory (23.2 per cent), the full-time unemployment to population ratio for Western Australia (7.4 per cent) was much higher than that for the Australian Capital Territory (6.7 per cent). This difference reflects the higher labour force participation rate in Western Australia, combined with a higher proportion of the unemployed looking for full-time work.

## Conclusion

Two features that distinguish the labour force behaviour of teenagers from that of other population groups are their lower level of participation in the labour force and their higher level of attendance at educational institutions. These two factors have a significant impact on the official teenage unemployment rate, which has led to the construction of the various supplementary measures of teenage unemployment presented in this article. While these supplementary measures of teenage unemployment are neither definitive nor exhaustive, they provide a more comprehensive picture of the unemployment situation for teenagers.

This feature article was contributed by Judy Daniel and Jane Wallwork, Labour Statistics Analysis Unit, ABS.

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